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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/756,420

01/14/2004

Michael G. Cronin

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2677

7590

12/17/2004

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EXAMINER

LE, DANG D

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 12/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/756,420

Applicant(s)

CRONIN ET AL.

Examiner

Dang D Le

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/14/04</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the groove width and land width in claims 15 and 24 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

Art Unit: 2834

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 6-9, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Potter (3,260,872).

Regarding claim 1, Potter shows a cooling system for an electric motor, comprising:

- A cooling duct (16, 17) formed between a cooling jacket and a separate component surface (19), the separate component surface defining at least a portion of a wall of the cooling duct, the cooling duct being configured to direct a cooling liquid along at least a portion of the separate component surface and draw heat from the electric motor;
- An inlet port (15) in fluid communication with the cooling duct, the inlet port being configured to receive the cooling liquid to introduce the cooling liquid to the cooling duct; and
- An outlet port (14) in fluid communication with the cooling duct.

Regarding claims 6-9 and 18, it is noted that Potter also shows all of the limitations of the claimed invention including the annular ring (20).

4. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Mossay (3,009,072).

Regarding claim 1, Mossay shows a cooling system for an electric motor, comprising:

- A cooling duct (26, 13) formed between a cooling jacket (10) and a separate component surface (1), the separate component surface defining at least a portion of a wall of the cooling duct, the cooling duct being configured to direct a cooling liquid along at least a portion of the separate component surface and draw heat from the electric motor;
- An inlet port (22) in fluid communication with the cooling duct, the inlet port being configured to receive the cooling liquid to introduce the cooling liquid to the cooling duct; and
- An outlet port (23) in fluid communication with the cooling duct.

Regarding claim 2, it is noted that Mossay also shows all of the limitations of the claimed invention in Figure 5.

Regarding claims 3-5, it is noted that Mossay also shows all of the limitations of the claimed invention in Figure 2.

5. Claims 25-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Hernden et al. (5,363,002).

Regarding claims 25-27, Hernden et al. shows all of the limitations of the claimed invention in Figures 1-4 including a cooling jacket (15), a stator (28), a rotor (11), and fluid passage to direct cooling fluid in the operating region (Figure 4).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 10, 11, 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potter in view of Hernden et al. (5,363,002).

Regarding claims 10, 11, and 19-23, Potter shows all of the limitations of the claimed invention except for the passages formed to direct a cooling liquid onto end windings of the stator.

Hernden et al. shows the passages (47) configured to direct a cooling liquid onto end windings of the stator (Figure 4) for the purpose of reducing heat from end turns.

Since Potter and Hernden et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to include passages to direct fluid at end turns as taught by Hernden et al. for the purpose discussed above.

Regarding claim 24, Potter and Hernden et al. also shows all of the limitations of the claimed invention except for the groove width to land width ratio being between a ratio range of 2 to 3 and 3 to 2. It would have been obvious to one having ordinary skill in the art at the time the invention was made to the groove width to land width ratio being between a ratio range of 2 to 3 and 3 to 2 for the purpose of maximizing the heat reduction, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

9. Claims 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hernden et al. in view of Crowell et al. (5,859,482).

Regarding claim 12, Hernden et al. shows all of the limitations of the claimed invention including cooling jacket (15) and a stator (28) with an outer surface (Figure 3) except for the spiral-cooling duct.

Crowell et al. makes the cooling duct spirally (Figure 6) for the purpose of reducing heat.

Since Hernden et al. and Crowell et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make the cooling grooves spirally as taught by Crowell et al. for the purpose discussed above.

Regarding claims 13, 14, 16, and 17, it is noted that Hernden et al. and Crowell et al. also shows all of the limitations of the claimed invention.

Regarding claim 15, Hernden et al. and Crowell et al. also shows all of the limitations of the claimed invention except for the groove width to land width ratio being between a ratio range of 2 to 3 and 3 to 2. It would have been obvious to one having ordinary skill in the art at the time the invention was made to the groove width to land width ratio being between a ratio range of 2 to 3 and 3 to 2 for the purpose of maximizing the heat reduction, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

10. Claims 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hernden et al. in view of Potter.

Regarding claims 28 and 29, Hernden et al. shows all of the limitations of the claimed invention except for the end plate and spiral grooves.

Potter shows the end plate and spiral grooves for the purpose of reducing heat.

Since Hernden et al. and Potter are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to include the end plate and spiral grooves as taught by Potter for the purpose discussed above.

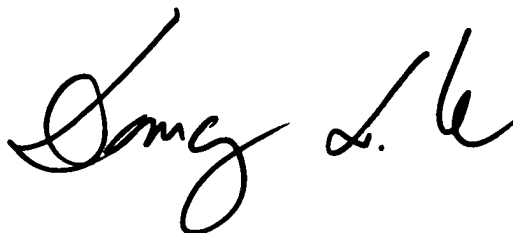
Information on How to Contact USPTO

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D Le whose telephone number is (571) 272-2027. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

12/8/04

A handwritten signature in black ink, appearing to read 'Dang D Le', with a stylized flourish at the end.

DANG LE
PRIMARY EXAMINER